

REMARKS

Claims 1, 3-6 and 8-17 are pending in the application and are rejected. Also submitted herewith is a Request for Continued Examination.

In accordance with the invention, an implant device uses thread parts which serve as retention elements having a shallow slope at the apical side and a steep or more rectangular shape on the cervical side. The retention elements function similar to shark teeth. During surgery, the retention elements allow the implant to enter the bony preparation and then hook onto the surrounding bone. This latter feature prevents the implant from being removed by pulling the implant out of the bone tissue.

Applicant traverses the rejection of claims 1, 3 and 9 as anticipated by Mena US 2002/0102518.

Independent claim 1 specifies an intra-osseous implant for placement in bone of a human or animal body comprising at least one intra-osseous part intended for placement in bone tissue having an apical side and a cervical side and composed of a body friendly material. The part is provided on its circumferential surface with a screw thread running in the direction of and ending at the apical end. A support part is present at the cervical side of the at least one intra-osseous part intended for supporting a prosthetic element. The intra-osseous part is provided with multiple grooves extending in the longitudinal direction and over the entire length of the intra-osseous part, interrupting the screw thread into multiple interrupted screw thread parts. The multiple interrupted screw thread parts serve as retention elements allowing the placement of the implant in the longitudinal direction into the bone tissue but preventing the

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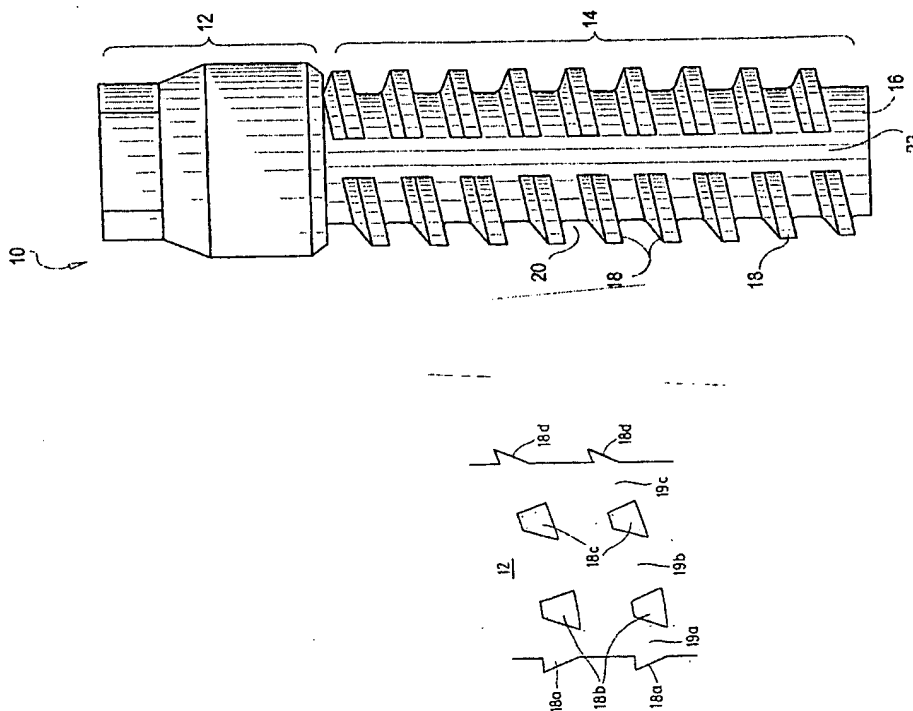
removal of the implant in the opposite longitudinal direction out of the bone. The retention elements are provided with a profile exhibiting a shallow slope toward the apical side and a steep slope on the cervical side.

An anticipation rejection requires that a single prior art reference disclose each and every element of the claim, arranged as in the claim. Mena does not anticipate any of claims 1, 3 or 9.

Particularly, Mena does not disclose or suggest retention elements allowing placement of an implant in a longitudinal direction into the bone tissue but preventing the removal of the implant in the opposite longitudinal direction out of the bone. More particularly, Mena does not disclose that retention elements are provided with a profile exhibiting a shallow slope toward the apical side and a steep slope on the cervical side.

The action incorrectly states that the threaded portions 18 of Mena have a profile exhibiting a shallow slope toward the apical side and a steep slope on the cervical side. The action acknowledges that Mena does not teach screw thread parts serving as a retention element, but then states that Mena's device is capable of functioning as claimed. Applicant disagrees.

Below is an image showing Fig. 1 of Mena (the top image) relative to Fig. 3b of the present application (the bottom image). Both correspond to the cervical side being to the left and the apical side to the right.



It is readily apparent from this comparison that the retention elements 18a, b, c and d of the present application, which exhibit the claimed shallow slope toward the apical side (the right side) and a steep slope on the cervical side (the left side), allow the placement of the implant in a longitudinal direction (from left to right) but prevent the removal of the implant in the opposite longitudinal direction out of the bone (from right to left). Conversely, it is apparent that with the thread portions 18 of Mena the opposite is true. The Mena threads have a steep slope on the apical side which would render it difficult, if not impossible, to allow placement into the bone tissue in a longitudinal direction. In fact, the implant would be more readily removed due to the

shallower slope toward the cervical side. Thus, contrary to the statement made in the action, Mena's device is not capable of functioning as claimed.

In the above applicant's Fig. 3b, the slope on the apical side is approximately 30°, while on the cervical side the slope is either 75° or 90° depending on the retention element being considered. Conversely, with Mena, the slope is shallower on the cervical side and is approximately 70° compared to approximately 100° on the apical side.

With the profile of the retention elements in accordance with the invention, the bone preparation fits the diameter and circumference of the implant root core. The retention elements dig into the surrounding bone during entering, as if it was a self-cutting thread, but in the longitudinal direction instead of a rotational direction. Thereafter, because of the retention feature, the implant can only be removed by unscrewing the implant, thus creating a rotational thread design in the bone tissue surrounding the implant core.

The Mena reference clearly shows a profile opposite to the profile of the present invention, making insertion with a mallet technique only possible if the bone preparation is as wide in diameter as the outer diameter of the thread of the implant. This results in no retention like element anchoring into the surrounding bone. Furthermore, the function of the grooves in the thread of Mena is unclear as it does not facilitate the implant entering the bone tissue. Due to the reverse thread profile, the diameter of the bone preparation opening needs to be at least the same as the diameter of the Mena implant, in fact the outer diameter of the screw thread on the implant, so that the screw thread parts do not dig into the bone tissue when entering in a longitudinal direction. The Mena implant can therefore only be tapped into its bony preparation

if the outer circumference of the thread parts engage the bone with very limited force.

Otherwise, the implant cannot be tapped as claimed by Mena.

Because Mena does not disclose each and every element of claim 1, arranged as in the claim, there is no anticipation and the rejection is improper.

Claims 3 and 9 depend from claim 1 and are not anticipated for the same reasons.

For the above reasons, claims 1, 3 and 9 are believed allowable and withdrawal of the rejection is requested.

Applicant traverses the rejection of claims 4, 8 and 15 as obvious over Mena and further in view of Alvaro U.S. Patent No. 6,099,312.

Claims 4, 8 and 15 all depend from claim 1. The deficiencies with respect to Mena and claim 1 are noted above. Alvaro does not disclose these deficiencies. Therefore, no combination of the references results in the invention of any of claims 4, 8 or 15 and withdrawal of the rejection is requested.

Applicant traverses the rejection of claim 5 as obvious over Mena and further in view of Vogt et al. 2004/0096804.

Claim 5 depends from claim 1. The deficiencies with respect to Mena and claim 1 are noted above. Vogt does not disclose or suggest the deficiencies with respect to claim 1. Therefore, no combination results in the claimed invention so that the rejection is improper and ought be withdrawn.

Applicant traverses the rejection of claim 6 as obvious over Mena in view of Misch U.S. Patent No. 5,954,504.

Claim 6 depends from claim 1. The deficiencies with respect to Mena and claim 1 are noted above. Misch does not disclose or suggest the deficiencies of Mena. Therefore, no combination of the references results in the claimed invention so that the rejection is improper and ought be withdrawn.

Applicant traverses the rejection of claims 10, 11 and 16-17 as obvious over Mena in view of Kanomi et al. U.S. Patent No. 5,921,774.

These claims all depend from claim 1. The deficiencies with respect to Mena and claim 1 are noted above. Kanomi does not disclose or suggest these deficiencies. Therefore, no combination of the references results in the claim invention. Therefore, the rejection is improper and ought be withdrawn.

Applicant traverses the rejection of claim 12 as obvious over Mena and apparently in view of Niznick, presumably U.S. Patent No. 5,427,527.

Claim 12 depends from claim 1. The deficiencies with respect to Mena and claim 1 are noted above. Niznick does not disclose these deficiencies. Therefore, no combination of the references results in the claimed invention and the rejection ought be withdrawn.

Applicant traverses the rejection of claim 13 as obvious over Mena in view of Lonca U.S. Patent No. 4,722,688.

Claim 13 depends from claim 1. The deficiencies with respect to Mena and claim 1 are noted above. Lonca does not disclose these deficiencies. Therefore, no

combination of the references results in the claimed invention and the rejection is improper and ought be withdrawn.

Finally, applicant traverses the rejection of claim 14 as obvious over Mena in view of Daftary U.S. Patent No. 5,759,034.


Claim 14 depends from claim 1. The deficiencies with respect to Mena and claim 1 are noted above. Daftary does not disclose these deficiencies. Therefore, no combination of the references results in the claimed invention and the rejection is improper and ought be withdrawn.

Summarizing, the principal reference, Mena, does not disclose or suggest an implant using retention elements which allow placement of an implant in a longitudinal direction but prevent removal of the implant in the opposite longitudinal direction out of the bone. Particularly, the profile of the threaded elements in Mena is opposite to the retention elements specified in the claims herein.

Reconsideration of the application and allowance and passage to issue are requested.

Respectfully submitted,

Date: September 23, 2009


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